

Alien Wanted Poster

Subject: Life science, Art

Grade: 6-8

Lesson Topic: Photography, technology, art

Length: 1-3

Learner Objective:

Students will become familiar with digital photography, scanners, and photo manipulation software.

Students will be able to express knowledge about invasive plants learned in previous lessons through art.

Students will gain knowledge of light, shadow, background, and other aspects of photography.

Students will have the opportunity to educate others, including peers and through community outreach.

Introduction:

When scientists such as ecologists, wildlife biologists, geologists, archaeologists and others are working in the field a photographic record of their findings often becomes an important part of the data they collect. Precise record of the time and place a photograph was taken enables them to return to the same spot and record changes over time. Sometimes the photographic record is the only record before something is lost or destroyed (can the students think of some examples?).

Content:

Photography involves an understanding of light and shadow, and an ability to “see” the background in relation to the subject just as clearly as the subject itself, i.e., it is not just the subject that make the photograph but the total of all images and light within the frame of the camera.

This particular activity can be done with a wide range of grade levels, using a wide range of cameras, and so the details of camera use and image composition will not be expanded upon. Younger students should be free to explore and evaluate their own images and older students may already have had training in image composition. This is a wonderful activity to involve the art and/or technology instructors at your school.

The Alien Wanted Posters can be used to teach others about invasive plants, including, the school population and in community outreach programs.

Materials and Supplies:

Digital camera(s) (disposable 35mm cameras may be used if prints can be scanned)

Access to computers with photo manipulation and word processing software

Photo print paper (optional)

Student Photo Data Sheet (see below)

Anticipatory Set:

Have the cameras in class and let the students know that they will all get to be photographers. Lead a short discussion on how a photographic record is one way that scientists collect data... can they think of examples where that is true? Alternatively, have a local wildlife photographer come speak to the class and show his/her own work.

Activity Outline:

Having identified and mapped the locations of invasive weed species at their school or in their community, the students will now return to those sites and make a photographic record of the aliens. Photographs may be of two types, 1) wide angle shots of a broad area, and 2) close-up photos of individual plants. In either case, or where possible, the time and location of the photograph should be record on a data sheet (see sample sheet below).

Try taking close-up pictures with various backgrounds by having a partner hold a large sheet of either black or white paper behind the plant. In most cases they will have sharper images if the light source (sun) is behind the photographer. Older students may want to have a scale (in centimeters) along one edge of the background paper so the relative size of the plant can be recorded. Photos should be taken at a level with the plant, rather than down at the plant.

Photos will be uploaded to a computer (or prints scanned into the computer). Advanced students may want to experiment with print size, resolution, file size, brightness and contrast, and other effects. Using a word processor, students will create a wanted poster with:

1. A large, bold font heading that says, "WANTED!"
2. The photo imbedded in the document below the heading
3. A brief description of the plant and where it's found
4. A description of it's crime(s) against the local environment
5. A reward

These are only suggested items to include, as the students may want to design their own layouts. Younger students, or those who are not yet familiar with word processing, can print the photo and paste it to a sheet of paper (8.5" x 11") and include the information by hand. All information for the poster should be taken from the invasive weed reports done previously in this unit. Alternatively, the instructor may want to provide a pre-made template of the wanted poster for the students to fill in with the appropriate information and photo.

Closure and Assessment:

Assessment may be in the form of a rubric which scores 1) photo features (scale, lighting, and detail), 2) behavior and attention (including involvement while outside, use of equipment, and teamwork), 3) completeness of information, and 4) oral presentation of findings.

Independent Practice and Related Activities:

Create a website of invasive weeds in your area.

Create a set of flashcards by printing a smaller version of the wanted poster (approx. 5" x 7"). The layout of the poster should have the space between the bottom of the picture and the text is in the middle of the card so it can be folded in half with the backsides glued to each other. This creates a flashcard with the photo on one side and the information on the other. They can be laminated for use in the field.

Use the flashcards for an Alien Scavenger Hunt.

Resources:

Local photographers

USDA Plant database for plant photos <http://www.plants.usda.gov/>

Vocabulary:

Dependent upon depth of subject and photographic terms that may or may not be introduced.

National Science Education Standards:

Science as Inquiry - CONTENT STANDARD A:

As a result of activities in grades 5-8, all students should develop

- ☐ Abilities necessary to do scientific inquiry
- ☐ Understandings about scientific inquiry

Life Science - CONTENT STANDARD C:

As a result of their activities in grades 5-8, all students should develop understanding of

- ☐ Structure and function in living systems
- ☐ Populations and ecosystems
- ☐ Diversity and adaptations of organisms

Science and Technology - CONTENT STANDARD E:

As a result of activities in grades 5-8, all students should develop

- ☐ Abilities of technological design
- ☐ Understandings about science and technology

Science in Personal and Social Perspectives - CONTENT STANDARD F:

As a result of activities in grades 5-8, all students should develop understanding of

- ☐ Populations, resources, and environments
- ☐ Science and technology in society

History and Nature of Science -CONTENT STANDARD G:

As a result of activities in grades 5-8, all students should develop understanding of

- ☐ Science as a human endeavor

Alien Wanted Poster Photo Data Record

Date	Photo #	Subject (plant name)	Location	Time	Background (white or black)	Other

Photographer's Name: _____

Camera used: _____

Notes: